

Cross border mapping of fuel products for the LANDFIRE and Canadian fire programs

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The LANDFIRE Program

The Landscape Fire and Resource Management Planning Tools, or LANDFIRE, Program is a joint effort between wildland fire management programs of the U.S. Department of Agriculture Forest Service and the U.S. Department of the Interior. LANDFIRE provides consistent and comprehensive landscape scale geospatial products to support cross-boundary planning, management, and operations. LANDFIRE distributes spatial data layers and database products describing existing and potential vegetation, surface and canopy fuels, and fire regimes for the entire United States and affiliated insular areas.

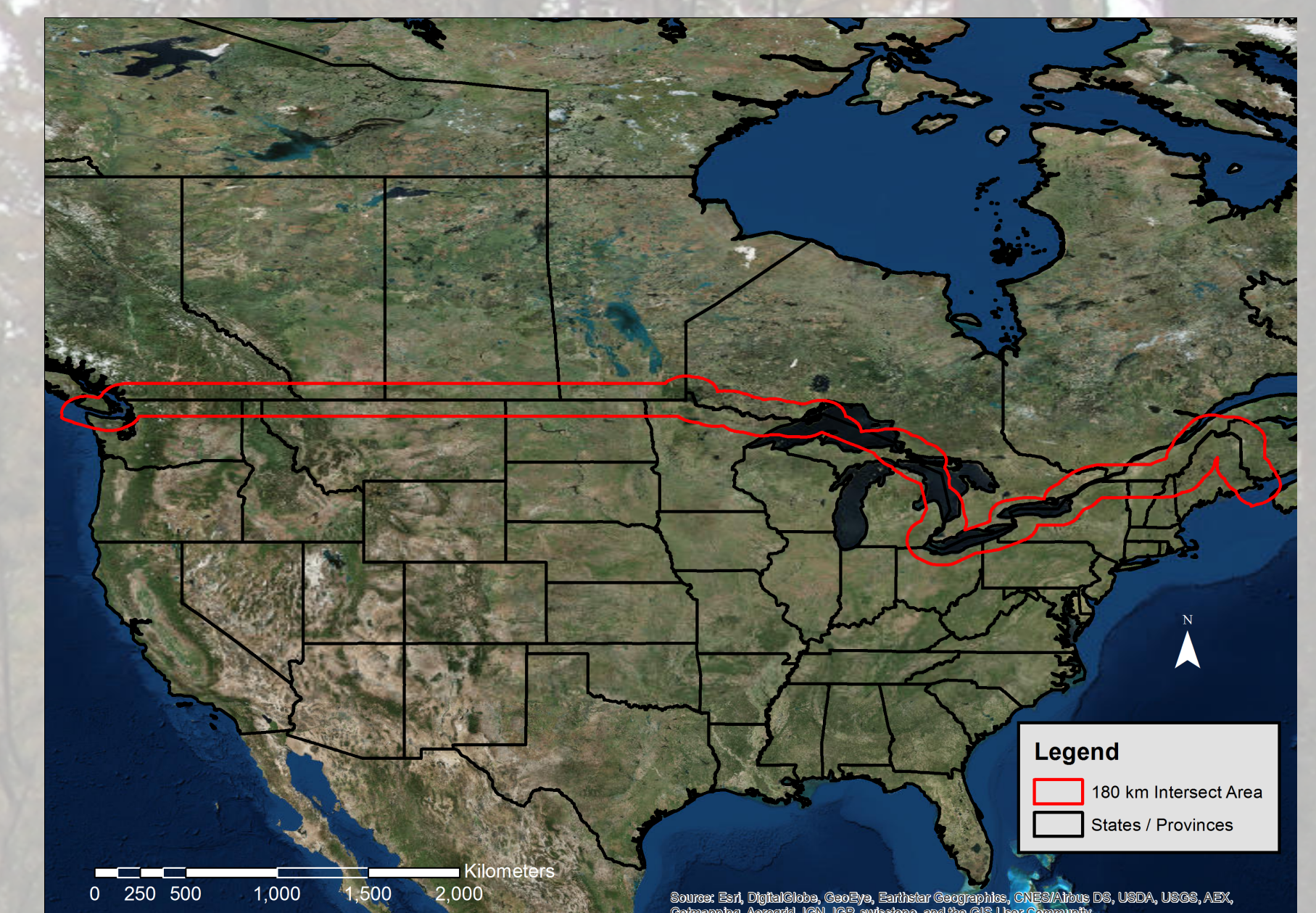
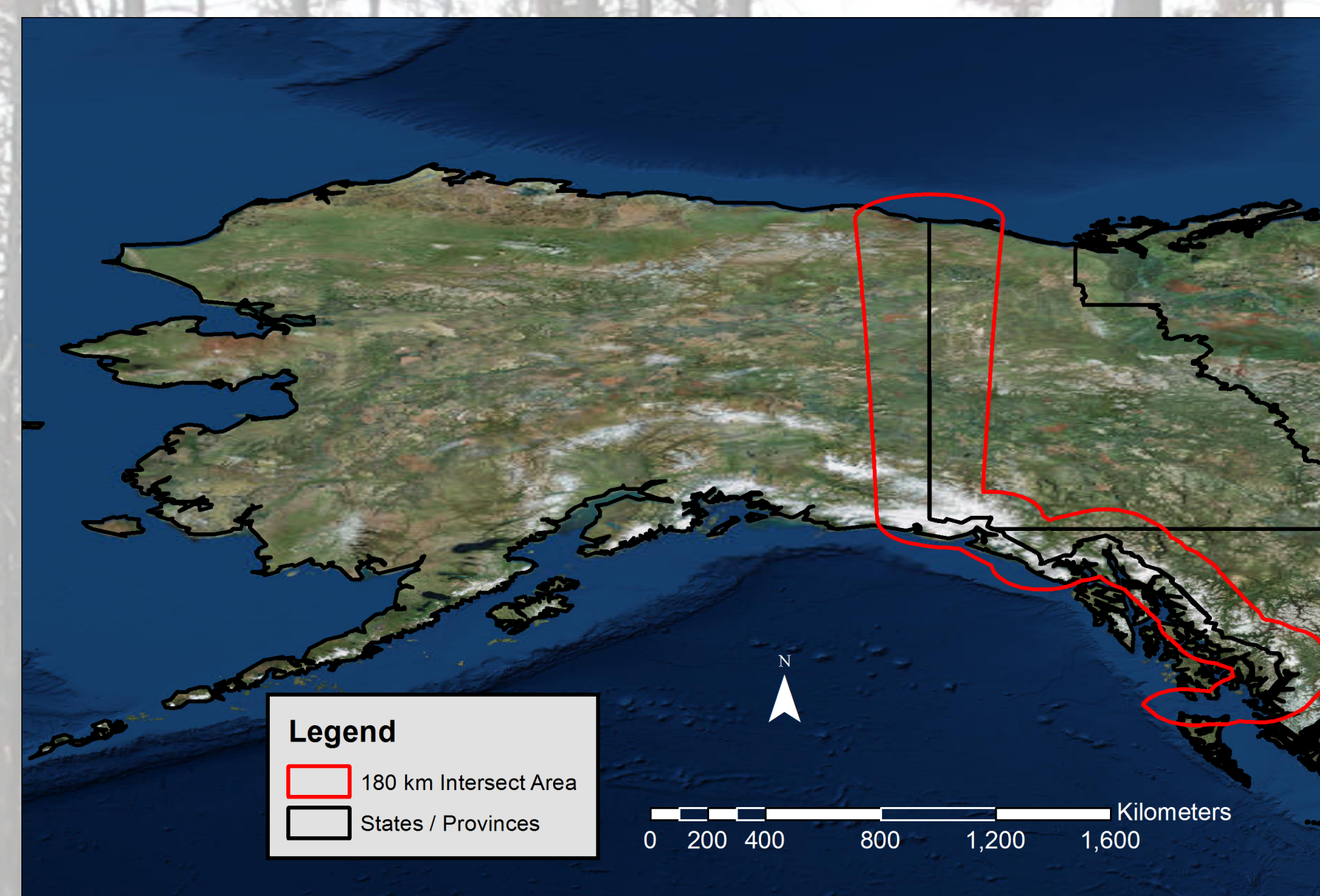
The first complete set of LANDFIRE products were created from 2005-2009 using satellite imagery from 1999-2003. Since then, LANDFIRE has been producing continuous updates to the base data in biennial increments. The latest update, LANDFIRE 2014, accounts for changes in vegetation and fuels as a result of landscape disturbance and succession in the years 2013 and 2014. LANDFIRE 2014 data products have been released for around half of the conterminous U.S. with the remainder expected by the end of the year and products for Alaska and Hawai'i expected in early 2017. LANDFIRE is also planning for its first re-mapping of the original base data. The LANDFIRE Remap effort will incorporate new satellite imagery, field plot data, algorithms, and computing capabilities to create a more current base map.

Product version	CY	2002	2004	2006	2008	2010	2012	2014	2016	2018	2020
LANDFIRE Project											
Prototype											
Rapid Assessment											
National c2001											
Rapid Refresh											
LANDFIRE Program											
LF 2001/2008											
LF 2010											
LF 2012											
LF 2014											
LF 2015 - Remap											
LF 2016											
LF 2018											
Base map production											
Update production											
Tentatively expected											

Collaboration with Natural Resources Canada

Wildfires, of course, do not respect national borders and cross-border incidents do occur. In addition, firefighters and incident management crews are often shared between the U.S. and Canada. Differences in available vegetation and fuels data, fuels classification systems, and fire behavior modeling systems between the two countries can lead to challenges for managing cross-border incidents or for personnel exchanges. Firefighter safety can even be at risk as a result of lacking familiarity with the different data and models available between countries.

To address these issues, LANDFIRE and Natural Resources Canada have teamed up to investigate the development of consistent datasets on either side of the U.S./Canada border. A 90 km buffer on each side of the border has been established and consistent data products are being developed within this 180 km intersect area. The goal of this collaboration is to map fuel products within this study area with each of the national systems and use the overlapping area to compare and contrast mapping methods and the two national fuels classification systems.



Future Work and Anticipated Outcomes

Some of the initial coordination activities include developing inventories of existing datasets, characterizing data parameters, and analyzing the differences and similarities between national programs. Some of the required datasets to be analyzed include vegetation type and structure, surface and canopy fuels, terrain, and fire history records. Follow-on analyses will investigate similarities and differences in fire behavior model outputs for cross-border incidents between the two national datasets. It is anticipated that these analyses will enable further mapping activities between the two countries and lead to safer and more fruitful crew exchanges and easier management of cross-border wildfires.

